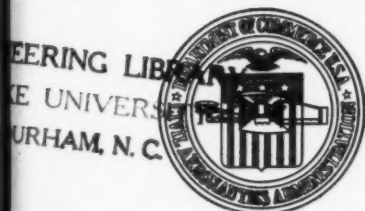


CIVIL AERONAUTICS JOURNAL



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WASHINGTON, AUGUST 15, 1943

NUMBER 8

CAA Conferees Discuss New Air Navigation Aids

High point in the CAA policy-making conference on air traffic control and communications held at Chicago the week of July 22, was the address given by CAA Administrator Charles I. Stanton on the post war future of aviation.

Mr. Stanton discussed the probable size and type of aircraft which could be expected, possible uses of gliders and their limitations, and the airports of the future and their relative size, number and location. The discussion included a general outline of the plans concerning aids to air navigation particularly with regard to installation of a system of very high frequency (VHF) radio ranges to replace the present intermediate frequency radio ranges when new equipment becomes available, and the installation of a number of nondirectional high powered radio broadcast stations across the country for use in radio direction finding.

Short-Cuts Needed

He concluded by discussing the future of air traffic control in relation to the great amount of air traffic expected, and recommended that serious study be given toward simplifying control procedures and reducing the amount of control work per aircraft in flight.

The conference members, agreeing on the need for short-cuts in control work, endorsed the installation, when possible, of the very high frequency radio range system as the means by which more direct control methods can be used.

Installation of the VHF radio ranges would permit direct radio contact between the CAA airport traffic controller and aircraft.

It would also permit two voice communications channels to be established on the radio range frequency, one for

handling air traffic control communications, and one for handling meteorological data, notices to airmen, directional services and so forth.

Approach Control

Important decisions reached at the conference included the approval of the revised approach control procedures which will be put into operation at Kansas City, Mo., and Atlanta, Ga., before the end of August and at other points throughout the country as soon as practicable.

(See Conference on page 102)

Board Preparing CAR's For Am. Flag Carriers

Safety rules which govern American air carriers now operating in and to foreign countries are slated to become part of the Civil Air Regulations of the CAB.

As a preparatory step, two CAB representatives, Robert D. Hoyt, Chief of the Safety Rules and Education Division and Ralph A. Reed, in charge of the Los Angeles office of the Safety Bureau, have been sent to South America to gather data that will form a working basis for these rules.

Their trip will take them into 13 countries where they will get first-hand information concerning aviation facilities and operational procedures in Central and South America.

First stop on the trip was Fort Worth where the two CAB officials conferred with CAA personnel who are charged with the regular inspection of all United States flag carriers operating in Central and South America.

CAA Develops Traveling Air Control Tower

A traveling air traffic control tower is being developed by the CAA Air Traffic Control Division. Combining the mobility of a truck and the necessary equipment for air control purposes, the new movable unit will be able to pinch hit in an emergency, or move into an airfield for a temporary engagement.

Designed as a self-sufficient, independent unit, the mobile control tower can be set up in a field and be on the job of directing air traffic in less than an hour after arrival. In case of sudden activity at airports where there is no control tower, or in case the established facilities have become inactive, the truck control tower can be moved in and put into action.

Fully Radio-equipped

According to the blueprints, the mobile unit, now under construction, will consist of a demountable control tower built on a 2-ton truck. It will be fully radio-equipped and will furnish its own power supply.

The movable tower will carry the same equipment as the usual stationary air traffic control tower. It will have low and ultra high frequency transmitters, and according to plans, 10 intermediate and ultra high frequency receivers, 2 altimeters, a marine clock, time stamp, binoculars, a traffic light signal gun, and all the other essentials. Operating power will be furnished by a 5KVA engine generator. Ordinarily two men will operate the unit, but in case of emergency it will be possible for one man to take over.

It is expected that the mobile control tower which is being developed primarily for CAA use may also prove of value to the armed services. It will be completed and ready for operation in the near future.

CAA To Produce Color Film Series For Use in Trainee Instruction

A color picture of a pilot radioing his flight plan to a control tower is flashed on the screen. The recorded words, "Washington tower from Cessna six, over," are heard—and a typical flight, presented through the strip film medium, is launched for a group of CAA Air Traffic Control trainees.

With this type of visual aid the CAA Air Traffic Control Division plans to make trainee instruction in technical subjects more effective. The production of a series of color strip films with accompanying sound devices is planned for use in training courses in each of the seven ATC training centers.

First in Series

"A Typical Flight," one of the first of the series to be completed, presents through pictures and sound the flight progress of a plane, and the succeeding steps taken by CAA air traffic controllers and communicators in directing the pilot in safe flight along the route from the take-off at the Washington National Airport to the landing at La Guardia Field in New York.

Take-off

Successive scenes take the student into the control tower, and into the airway traffic control center, where the flight progress board is described, to show how the pilot is cleared for take-off.

The pilot radios his flight plan to the control tower in the Washington National Airport. The tower operator writes down the flight plan, and the tower controller gives the pilot his taxiing instructions, "Cessna six, cleared to runway three six, wind north 8 miles, hold west of runway, will call with ATC clearance, over." Clearance to 25 miles southwest of Philadelphia, the end of the Washington control area, is issued by the airway traffic controller to the tower and relayed to the pilot.

The pilot, of NC 6, is on his way, and with parting words from the tower he is given clearance to leave the tower frequency and tune his receiver to the Washington radio range signal which keeps him on his course.

Word Sent on Ahead

While contact with the pilot himself is broken, those back in the tower and the control center are still busy with the affair. The tower operator notes the exact moment the wheels leave the ground, and notifies ATC. A record of the departure time is made on the progress board, and the flight plan is relayed to the communications office.

The next phase in the film shows the communications office carrying on from that point by relaying the flight plan to the La Guardia communications office by the way of teletype. Then the student is taken to the New York con-

trol center where the information is received. He sees that the relaying of the flight details is handled in much the same way in New York ATC as in Washington. The La Guardia tower operators are notified so that they may know when to expect the flight and can plan their operations accordingly. Details of the flight are posted on the La Guardia flight progress board. Now both control centers have complete knowledge of the flight.

Position Report

En route the pilot is shown passing from the northeast leg of the Washington radio range on his route to the west leg of the Baltimore radio range. Before reaching the intersection of the radio legs, the pilot switches over to the Baltimore range frequency and, having established his position by receiving a steady signal, he calls the Baltimore radio station to make a position report.

This report is relayed to both Washington and New York by interphone where notations are made on the flight progress boards.

Landing Clearance

About this time NC 6 is nearing the New York control area, and the next phase shows the New York ATC clearing him. Having received the position report from Baltimore radio, the New York Airway Traffic Controller determines the time NC 6 will approach the New York control area boundary line, prepares a clearance form, and calls Philadelphia radio by interphone. The Philadelphia radio station contacts the pilot and relays his clearance instructions.

Over the Philadelphia radio range station the pilot makes another position report. This time the message is relayed to the New York center only, since the flight has left the Washington airway traffic control area.

The clearance instructions are interpreted and the instrument landing made by the pilot is described to the trainees by the commentator. And the final step, the making of the arrival report, is demonstrated. As soon as the plane lands, the La Guardia tower notifies the New York ATC, which in turn relays the message to Washington ATC through communications, thus closing out the flight plan and completing the film.

Plan 50 Films

A preview of this film was shown to traffic control and communications officials attending the CAA conference held in Chicago recently. Plans are now under way to develop around 50 similar strip films for training classes on subjects such as meteorology, radio aids to air navigation, the Civil Air Regulations, and airport and airway traffic-control procedures and phraseologies.

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Conference

(Continued from page 101)

An on-the-job training program for use in personnel advancement in the field was approved by conference members and will be put in operation within the next month or so. While Air Traffic Control personnel have been learning the work by doing it, the on-the-job training will now follow a set plan that will insure national uniformity.

Suggestion Plan

An Air Traffic Control "suggestion plan" was also adopted. A committee is to be set up in the Washington office of the ATC Division, and various field personnel are being asked to send the committee any suggestion they may have for short-cuts, improvements in equipment, and more efficient operation.

The purpose of the plan is to encourage personnel to make practical suggestions for promoting efficiency and economy and to enable them to receive recognition for constructive thinking.

The plan, which ATC expects to have in operation by August 15, will be conducted on a test basis for about 90 days. At the end of 90 days, if the plan operates satisfactorily, it is expected that a similar type plan will be recommended for the entire CAA.

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AIR TRANSPORTATION

21 New Applicants Ask CAB For Air Carrier Certificates

During July the Civil Aeronautics Board received a large number of applications from new applicants asking for aircarrier certificates. Twenty-one new applicants requested authorization to go into the air transportation business.

Among these are 10 companies now operating as bus or motor carriers.

The Rio Grande Motor Way, Inc., Denver, applied for authorization to carry persons, property and mail over 15 routes between Denver, Colo., on the east, Los Angeles, Calif., on the west, Ogden, Utah, on the north and Albuquerque, N. Mex., on the south. In a separate docket the company applied for freight service over the same routes.

The Indiana Motor Bus Co., Plymouth, Ind., applied for aircarrier service between Indianapolis, Ind., and Grand Rapids, Mich.

The Willis Day Storage Co. filed application for nonscheduled air transportation of household goods between all airports in the United States.

R-B Freight Lines, Inc., Aberdeen, S. Dak., applied for (1) a general commodities transportation between Minneapolis-St. Paul, Minn., and Billings, Mont., via Watertown and Aberdeen, S. Dak., and Miles City, Mont., and (2) persons and mail over routes that would touch the same cities.

Asbury Park-New York Transit Corporation asks for air service by helicopter or other type aircraft between Asbury Park, N. J., and New York City, and between New York City and Atlantic City, N. J.

Interstate Transit Lines of Omaha, Nebr., applied for air transportation of persons, mail, baggage, and light express by helicopter or similar aircraft over 26 routes extending from Chicago, Ill., to cities on the west coast.

Knowles Vans, Inc., applied for the transportation of property over regular and irregular routes, including call and demand service, in interstate and foreign commerce.

Logan Williamson Bus Co., Logan, W. Va., applied for air service over three routes in West Virginia, Tennessee, Kentucky, and Virginia.

Coastal Tank Lines, Inc., York, Pa., applied for nonscheduled air transportation of liquid commodities in interstate and foreign air commerce between any and all points in the United States, Alaska, Canada, and Mexico.

Pierce Auto Freight Lines, Inc., made application for nonscheduled transportation of persons, express, and freight between certain points in Oregon and California.

The other new companies and individuals who have applied for certificates authorizing air transportation of persons, property, and mail are:

Seaboard Air Transport, Lumberton, N. C.—between Wilmington, N. C., and Knoxville, Tenn., and between Lumberton, N. C., and Columbia, S. C.

Kentucky-Tennessee Airlines—by helicopter to points in Kentucky and Tennessee.

B. M. Stuart & Sons, Russellville, Ky.—over 17 routes through the middle Southern and Central States.

Wilson McCarthy and Henry Swan, trustees of the Denver and Rio Grande Western R. R. Co.—15 routes with the same terminal points as designated in the Rio Grande Motor Way application.

Bowen Airways, Fort Worth, Tex.—28 routes through Texas, Oklahoma, Missouri, Louisiana, and Utah.

Engel Air-Feeder Lines, Escondido, Calif.—by conventional type planes or helicopter service between a number of cities and towns in California.

Air Car Service Co., Pittsburgh, Pa.—by helicopter between a number of towns and cities in Pennsylvania. Shuttle service between principal airports of the cities of Pittsburgh, Youngstown, Cleveland, Columbus, Toledo, Cincinnati, Detroit, Chicago, St. Louis, New York City, and Philadelphia.

Union Airways, Hagerstown, Md.—7 routes from Hagerstown to Scranton, Pa., Rochester, N. Y., Pittsburgh, Annapolis, Raleigh, and Lynchburg.

Lincoln Air Lines, Inc., New York City—persons, mail, baggage, and express by helicopter, or similar aircraft. The routes lead mainly from New York City to surrounding towns and cities in New York State. One route is proposed to Atlantic City, and another from Atlantic City to Washington, D. C.

John C. Van Son, Kenmore, N. Y.—helicopter service over the scenic Buffalo, Grand Island, Niagara Falls route.

Loening Heads NACA Helicopter Committee

The National Advisory Committee for Aeronautics has formed a subcommittee on helicopters and appointed Grover Loening, Consultant on Aircraft of the War Production Board, as chairman.

Mr. Loening, aeronautical engineer, author, and inventor, has been a conspicuous figure in the field of aviation for many years. Assistant engineer to Orville Wright in 1913, he has since that time been associated with a number of aviation enterprises, including the Loening Aeronautical Engineering Co., The Curtiss-Wright Corporation, and the Grover Loening Aircraft Corporation.

He is the author of "Monoplane and Biplanes," "Military Aeroplanes," and "Our Wings Grow Faster," and was the builder of the Loening Amphibian.

15 Examiners Staff New Office Set Up By Board

The Civil Aeronautics Board has created the Office of Trial Examiners to serve under direct jurisdiction of the Board. The staff of this office will act as examiners in the hearing of all applications for new routes, foreign air carrier permits, mail rate cases, and all other cases involving aviation economic proceedings before the Board. About 15 examiners heretofore attached to the Economic Bureau of the Board will be transferred to the new office.

C. Edward Leasure, who has served with the Board since the creation of the Civil Aeronautics Authority in 1938, has been named as Chief Examiner.

Widely known in the air transport industry, Leasure has had 21 years' experience in public utility regulation and holds degrees in both civil engineering and law. For the past 3 years he has been Chief of the Board's Proceedings Division in the Economic Bureau. He served with the Interstate Commerce Commission in both legal and engineering capacities prior to association with the Board.

CAB Officials Fly to Kentucky On Airline Crash

Shortly after the American Airlines DC-3 airliner crashed near Trammel, Ky., around midnight July 28, CAB officials were on their way to the scene of the accident to investigate the cause.

Edward P. Warner, CAB Vice Chairman and internationally known aeronautical engineer, and Allen P. Bourdon, Chief of the Accident Investigation Division of the CAB Safety Bureau took off the next morning from the Washington National Airport in a CAA Beechcraft, with Charles Donaldson, CAA Director of Airports, as pilot.

Earl L. Smith, CAB Safety Investigator from the Detroit region also flew to the scene of the accident.

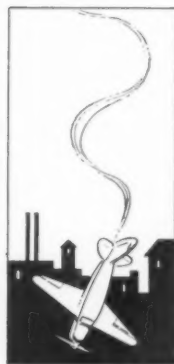
The 4 crew members and 16 passengers were killed by the crash. Two passengers survived. The plane was piloted by B. A. Carpenter, veteran flier, and sixth oldest man in service.

Hearings on H. R. 1012

The hearings of the Seventy-eighth Congress on the bill (H. R. 1012) which was introduced to amend the Civil Aeronautics Act of 1938 is available for 6 cents a copy at the Government Printing Office, Superintendent of Documents, Washington, D. C.

Forced Landing, Collision, Stalls, Cause These Accidents

Spin-Stall Accident Fatal To Passenger



An accident which occurred adjacent to the Dalton Airport, Dalton, Ga., on November 22, 1942, resulted in serious injuries to Pilot Samuel Paul Hudgins and fatal injuries to his passenger, Harold Nations. Hudgins held a student pilot certificate and had accumulated about 20 hours of solo flight time. The passenger was not certificated as an airman.

The aircraft, a Taylorcraft BC, was demolished.

Hudgins, accompanied by Nations, took off without clearance from the Dalton Airport. There was no clearance officer at the airport and the guard on duty stated that he was unaware of the take-off. Soon after the craft's take-off, a pilot-instructor observed the airplane, at an altitude of approximately 200 feet, just north of the airport, making "a steep right turn or entering a spin." Almost immediately the aircraft disappeared from view behind trees and buildings. Another witness, who was about 100 yards from where the accident occurred, stated that the plane made a right-hand turn, and went into a spin.

Investigation revealed that the plane had struck the ground nose first, in an almost vertical position, approximately 300 yards from the north end of the north-south runway. Examination of the wreckage failed to reveal any indication of mechanical failure of the aircraft or engine prior to impact. The throttle was found in the full "open" position, while the ignition switch was so badly crushed and distorted that its position before the plane struck the ground could not be determined. The propeller was broken in such a way as to indicate that little or no power was being developed. Dual controls were connected.

The weather (unofficial) at Dalton Airport was: Ceiling 3,000 feet, visibility 10 miles, very light rain, wind south estimated 8 mph.

Probable cause.—Stall and spin at a low altitude, from which recovery was not effected.

Contributing factors.—1. Inexperience of the pilot. 2. Lax supervision of flying at this airport.

Father and Son Collide While Stunt Flying

James Harold Nickerson, flying Great Lakes 2T-1A, and his son, Harold Gene Nickerson, flying a Luscombe 8A, were fatally injured in a mid-air collision which occurred near Municipal Airport No. 2, Tucson, Ariz., on February 4, 1943. Although James Nickerson held a commercial pilot certificate with a single-engine O-80-horsepower land rating, it was not in effect at the time of the accident since his last physical examination had expired on January 12, 1943. As nearly as could be ascertained, he had accumulated about 986 flying hours over a period of many years. Harold Nickerson held a private pilot certificate with a single-engine O-80-horsepower land rating. He had flown about 200 hours. The aircrafts were demolished.

Harold Nickerson received clearance from the Tucson Municipal Airport No. 2, and took off in a Luscombe. His father, James Nickerson, obtained a clearance and took off shortly afterward in a Great Lakes. Both pilots proceeded to an area 3 or 4 miles northwest of the airport where they were observed by several witnesses to engage in maneuvers simulating a "dog fight." This involved diving at each other, flying in close formation, and circling each other at an altitude of approximately 1,500 feet. During one of these "dog fights," the planes were observed to circle about the area, approach each other head-on, and collide. The Luscombe's left wing tip struck the left interplane strut of the Great Lakes, following which the two aircraft separated and both fell to the ground out of control.

Inasmuch as the accident occurred just a few minutes before sundown, it is possible that the brightness and intensity of the sun at this time may have contributed to the pilots' failure to avoid each other. James Nickerson had suffered a nervous break-down in January and was released from the hospital on January 29, only 6 days prior to the accident. Neither pilot wore a parachute.

Probable cause.—Failure of both pilots to avoid other aircraft while performing acrobatic maneuvers in close proximity.

Contributing factor.—Recklessness.

Propeller Shaft Fails Forced Landing Fatal

William George Paine and his three passengers, Mr. and Mrs. James J. Keenan and Frank Widegar, were fatally injured in an accident which occurred on the Nulato River, about 15

miles north of Nulato, Alaska, on September 30, 1942. Paine held a commercial pilot certificate with a single engine 0-245-horsepower land rating. He had accumulated approximately 800 hours of flying time. The aircraft, a Cessna C-38, was demolished. It was powered by a Warner Super Scarab 145-horsepower engine and equipped with a Hamilton Standard, adjustable metal propeller.

Pilot Paine, without filing a flight plan or obtaining a weather report, departed from Nome, Alaska, on September 30, for Keenan's Mining Camp, where he was to pick up the three passengers. A log of the trip indicated a landing and take-off also at Taylor, Alaska. Since Pilot Paine had filed no flight plan and made no radio contact with the CAA Communications Station at Nome, nothing was known of the accident until the following day, when a passenger in a Wien Alaska Airlines plane observed the wrecked craft in the Nulato River approximately 200 miles out of Taylor. A rescue party, dispatched from Nulato, arrived at the scene October 2, and found the aircraft resting nose downward in about 3 feet of water, with the tail extended upward.

The engine was found about 100 feet from the aircraft but the propeller was not located. Examination of the wreckage revealed that the propeller end of the crankshaft had broken off flush with the thrust bearing cover plate. The U-shaped fracture extending along the bottom and up both sides of the shaft was rusted to a depth of approximately



one-third of the diameter of the shaft, and the metal at the top and center portion of the shaft indicated a recent break. Maintenance records of the aircraft indicated that it had received its last 100-hour check approximately 63 hours prior to the accident, at which time inspection of the propeller shaft was made. However, the records do not show that since this check, the 25-hour inspections of the shaft were made in compliance with Airworthiness Inspection Note No. 1 of Am-26. Had such inspection been made, it is very probable that the crack in the shaft would have been noticed. Computation of the c. g. indicated that the aircraft was loaded between 5 and 6 inches aft of the approved rearward limits. With the loss of the propeller this condition would have been aggravated.

Probable cause.—Forced landing over unfavorable terrain due to failure of propeller shaft.

Contributing factor.—Inadequate maintenance inspection.



21 Fatal Accidents Are Reported To CAB Safety Bureau in June

During the month of June, reports of 22 fatal accidents in non-aircarrier flying were received by the Safety Bureau. One of these accidents occurred in January. Investigation was completed on 8 accidents. A brief description of these accidents follows:

1. Instructor and student took off on instructional flight. After a few minutes of flight they returned to the field and practiced landings. After the third take-off, at an altitude of 200 feet, and at approximately 1,500-1,800 feet from the end of the runway, the aircraft was seen to fall off to the left and dive into the ground, crashing near the base of a tree.

2. Pilot took off on cross-country flight and was not heard from after take-off. A search was started and the wreckage was located on the side of a mountain at an altitude of about 3,000 feet above sea level and 40 miles from his starting point. Investigation revealed that low clouds, mist, and fog prevailed in this area at the time of the crash.

3. Two planes were turning from the base leg into approach to airport at a distance of about one-half mile north of the airport and at an altitude of 500 feet. One plane was slightly lower and slightly ahead of the other. The aircraft collided and one plane fell to the ground in a spin and was demolished. The other plane proceeded to the airport, and in landing, groundlooped 180°, due to the fact that the landing gear was damaged in the collision.

4. During the take-off from an improvised runway on a farmer's field,

which was being used as an operations base for crop-dusting, the pilot failed to observe a high-tension line and flew directly into it at its highest point.

5. A pilot and his passenger were cleared for a local pleasure flight. They were observed in the vicinity of the airport flying in a near stalled attitude. The aircraft then flew in a straight direction to an area where pylons had been built. At an altitude of 600-800 feet the aircraft was seen to make a left turn, at a point indicating that the pilot was practicing 8's on pylons, fall out of the turn and enter a left spin which continued into the ground.

6. An instructor and his student took off on an instructional flight. According to witnesses, both in the air and on the ground, the aircraft was stalled at an altitude of 300-400 feet, and crashed into the river.

7. During a dual instructional flight, at an altitude of 300-400 feet, the aircraft was observed to make a left turn and enter a spin to the left. Full recovery was not effected before striking the ground.

8. During simulated forced landing practice and while at an altitude of about 300 feet, the left wing was seen to drop and the aircraft entered a left spin. Partial recovery was effected after about one and one-half turns of the spin had been completed, at which time the aircraft struck the ground.

Reports of investigations of 14 other fatal accidents which occurred in June have not yet been received.

Moving Propellers Pack a Wallop

Ponca City, Okla., adds one to the score of the flying propellers. This makes 3 persons injured already this year by the lethal swish of these potential man-killers. This is running true to form, for propellers killed or severely injured 17 persons in 1942; 21 in 1941; 23 in 1940, and 19 in 1939.

Everybody knows what a moving airscrew can do, yet each month one or more persons get in their slicing path. Sometimes it is just plain carelessness on the part of a child or innocent bystander—but in such cases it usually must be charged to laxity on the part of the airman around, or the airfield guards, who have failed in alertness or in warning others.

In the most recent case a confused student turned the switch on before "contact" was requested by the instructor who was priming the motor. The result was that the engine started and a capable and much needed pilot-instructor was knocked flat and severely injured.

Another of this year's victims was an

airport guard who was clipped by the propeller of a taxiing plane. Last year an instructor, after giving final solo instructions to a student, backed into serious injury. An airfield staff man walked into a whirling propeller. A child of 3½ years was killed when she ran into the fatal arc. A lone pilot gave a few priming turns to the prop, serene in the belief that the switch was "off." It wasn't but he, too, learned it the hard way. He hadn't bothered to place chocks before the wheels—and there was nobody in the cockpit.

The list is long, and from a survey comes the pitiful commentary that not one of them was inevitable. This danger is so obvious that airmen take it for granted that everyone will avoid it. And in their complacency about it they are frequently the victims.

Some airfields advocate the painting of the propeller tips a bright color. This helps somewhat since the fast revolutions give the impression of a solid ring barrier, instead of the usual slightly blurred circle.

Short Pleasure Flight Ends in Smash-up

Frederick R. Knautz and his passenger, Mrs. Dorothy Krovoza, were seriously injured in an accident which occurred at the Municipal Airport, Hot Springs, S. Dak., on January 24, 1943. Knautz, age 42, was not certificated as an airman, although he had formerly held a private pilot certificate which expired September 30, 1937. He stated that his total flight time was about 190 hours and that he had flown 1 hour in the 90 days preceding the accident. The aircraft, an Aeronca 50-C, was extensively damaged.

Knautz, a resident of Fargo, N. Dak., was spending Sunday at Hot Springs with a friend, Dr. J. M. Butler (a pilot), who stated he had believed Knautz to be an experienced and certificated airman. During the afternoon they went to the airport. After Dr. Butler had made a flight, with the owner of the subject aircraft as a passenger, Knautz was asked if he wished to fly and he accepted the invitation. The airport manager, who was also a clearance officer, issued clearance for a 15-minute pleasure flight, with Mrs. Krovoza as passenger. He did not ask Knautz for any credentials. The craft took off and disappeared in the direction of Hot Springs. According to witnesses, both the take-off and climb appeared normal. Approximately 15 minutes later the aircraft was observed approaching the airport from the west in a glide for a landing. Witnesses stated that the glide appeared normal except for an appreciable amount of rocking, which they attributed to rough air conditions. Upon reaching the west boundary of the airport, at an altitude of from 50 to 75 feet, the plane was stalled and fell off to the left, striking the ground on the left wing.

Examination of the wreckage disclosed no indication of failure of any part of the aircraft prior to impact. Dual controls were connected.

Probable cause.—Stall at low altitude during landing approach.

Contributing factor.—Pilot's lack of recent flying experience.

Age-and-hour Limit

The Select Committee of the House of Representatives to Investigate Air Accidents has recommended that consideration be given to an age-and-hour limit for pilots in passenger-carrying service.

Domestic Air Carrier Operation Statistics for the Month of May 1943

Operator	Routes Operated	Revenue Miles Flown	Revenue Passengers Carried	Revenue Miles Flown	Express Carried (Pounds)	Express Pound-Miles Flown	Passenger Seat-Miles Flown	Revenue Passenger Load Factor (Percent)
All American Aviation, Inc.	Pittsburgh, Huntington, Philadelphia, Williamsport, Jamestown, etc.	88,240	0	0	13,841	1,830,613	0	
American Airlines, Inc.	Dallas-Los Angeles	613,424	13,770	11,099,166	165,930	166,634,652	11,933,453	93.01
	New York-Chicago	372,294	17,114	6,050,292	823,044	256,670,751	6,836,017	88.51
	Boston-New York	103,286	10,690	1,818,930	241,710	37,364,583	2,063,206	88.16
	Boston-Cleveland	18,741	1,835	298,971	34,466	6,240,067	373,157	72.08
	Cleveland-Nashville	62,622	4,987	1,092,869	92,051	22,782,184	1,307,463	83.59
	New York-Fort Worth	598,923	18,311	10,284,503	269,549	136,198,018	11,216,725	91.69
	Washington-Chicago	156,226	6,039	2,509,398	106,150	40,097,556	2,919,176	85.96
	Chicago-Fort Worth	112,110	3,997	1,912,599	74,324	45,969,376	2,094,004	91.34
	Buffalo-Toronto	3,800	498	37,848	2,765	210,140	77,900	48.59
	El Paso or Fort Worth-Mexico City	130,840	1,798	1,734,015	12,385	13,241,567	2,345,541	73.93
	Total	2,172,266	79,048	36,808,561	1,622,374	725,408,924	41,166,642	89.41
Braniff Airways, Inc.	Chicago-Dallas	154,969	4,781	2,658,818	64,465	36,802,565	2,779,619	95.05
	Dallas-Brownsville	126,077	7,626	1,946,975	29,980	7,491,367	2,237,717	87.01
	Total	281,076	12,407	4,605,793	94,445	44,293,932	5,017,336	91.80
Chicago & Southern Air Lines, Inc.	Chicago-New Orleans	154,204	6,319	2,517,837	59,231	26,042,383	2,952,318	85.28
	Memphis-Houston	29,338	1,213	386,704	8,007	3,256,868	531,228	72.79
	Total	183,542	7,532	2,904,541	67,238	29,299,251	3,483,546	83.38
Continental Air Lines, Inc.	Denver-El Paso	89,766	2,705	882,419	6,603	2,739,662	1,024,893	86.10
	Pueblo-Tulsa	29,586	1,176	271,250	1,257	327,585	329,178	82.40
	Total	119,352	3,881	1,153,669	7,860	3,067,247	1,354,071	85.20
Delta Air Corporation	Charleston and Savannah-Fort Worth	128,217	6,096	2,394,793	26,683	11,667,165	2,675,661	89.50
	Atlanta-Cincinnati	45,062	2,691	851,070	22,690	7,394,523	652,900	89.31
	Total	174,179	8,787	3,245,863	49,373	19,061,688	3,328,561	89.45
Eastern Air Lines, Inc.	New York-Brownsville and San Antonio	416,654	12,821	7,358,730	129,164	66,091,690	8,374,541	87.87
	New York-Miami	519,779	13,328	7,581,245	165,611	128,215,095	8,998,103	84.25
	Chicago-Jacksonville	169,853	7,430	3,005,320	77,087	34,252,576	3,408,775	88.16
	Atlanta-Tampa	24,882	1,252	435,669	9,378	3,504,159	520,585	83.69
	Total	1,131,168	34,831	18,380,964	381,240	232,063,520	21,302,004	86.29
Inland Air Lines, Inc.	Denver-Great Falls	42,732	804	287,409	1,059	206,602	420,750	68.31
	Cheyenne-Huron	19,622	0	0	26	6,649	0	
	Total	62,354	804	287,409	1,085	213,251	420,750	68.31
Mid-Continent Airlines, Inc.	Minneapolis-Tulsa	64,029	1,974	524,674	9,976	2,573,192	812,559	64.57
	Minneapolis-St. Louis, Des Moines, and Kansas City	38,904	599	160,771	2,663	725,613	394,983	40.70
	Total	102,933	2,573	685,445	12,639	3,298,805	1,207,542	56.76
National Airlines, Inc.	Jacksonville-Miami	50,034	2,379	580,068	8,716	1,960,293	698,696	83.02
	Jacksonville-New Orleans	85,777	3,074	1,068,774	14,571	4,000,715	1,182,189	90.41
	Total	135,811	5,453	1,648,842	23,287	5,961,008	1,880,885	87.66
Northeast Airlines, Inc.	Boston-Fresque Isle & Moncton	59,245	3,039	747,030	7,565	1,772,336	1,250,077	59.76
Northwest Airlines, Inc.	Chicago-Seattle	321,760	9,293	4,688,606	113,196	81,869,564	5,541,958	84.60
	Minneapolis-Duluth	6,578	0	0	967	138,281	0	
	Total	328,338	9,293	4,688,606	114,163	82,007,845	5,541,958	84.60
Pennsylvania-Central Airlines Corporation	Norfolk-Detroit	169,402	14,710	3,084,667	347,391	62,425,833	3,511,167	87.85
	Detroit-Milwaukee	14,725	1,349	213,963	18,253	3,300,389	309,225	69.19
	Pittsburgh-Buffalo	12,644	913	179,550	21,250	2,997,420	265,524	67.62
	Pittsburgh-Birmingham	39,360	1,737	589,649	6,676	2,073,944	822,926	71.65
	Total	236,131	18,709	4,067,829	393,570	70,797,586	4,908,842	82.87
Transcontinental & Western Air, Inc.	New York-Los Angeles	938,717	22,647	14,079,195	599,678	401,345,790	15,571,601	90.42
	Dayton-Chicago	14,374	1,004	216,322	45,950	9,270,587	280,468	77.13
	Boulder City-San Francisco	31,384	866	343,613	6,696	3,336,593	565,419	60.77
	Kansas City-Chicago & Pittsburgh	270,890	7,236	3,874,997	182,175	96,603,539	4,130,016	93.83
	St. Louis-Detroit via Cincinnati & Dayton	52,814	3,695	862,120	45,135	9,267,506	961,106	89.70
	Total	1,308,179	35,448	19,376,247	879,634	519,824,015	21,508,610	90.09
United Air Lines Transport Corporation	New York-San Francisco	1,245,474	21,112	18,942,107	650,439	531,624,984	20,766,020	91.22
	Salt Lake-Seattle	99,724	883	1,900,969	21,935	15,653,644	2,188,421	86.87
	Los Angeles-Seattle	403,506	19,254	7,756,963	132,213	58,087,662	8,255,725	93.96
	Seattle-Vancouver	13,312	1,248	164,927	3,836	478,099	278,494	59.22
	Total	1,762,016	44,768	28,764,966	808,423	606,444,389	31,488,660	91.35
Western Air Lines, Inc.	San Diego-Salt Lake City	131,952	5,635	2,388,387	70,554	32,470,032	2,657,010	89.89
	Salt Lake City-Great Falls	31,248	883	341,249	2,083	480,484	436,525	78.17
	Great Falls-Lethbridge	6,124	257	34,687	62	9,500	83,039	41.77
	Total	169,324	6,775	2,764,323	72,699	32,969,016	3,176,574	87.02
	Grand Total	8,314,154	273,318	130,130,118	4,549,436	2,378,253,426	147,336,058	88.32

Passengers carried (total revenue and nonrevenue) 282,103. Passenger miles flown (total revenue and nonrevenue) 133,266,615.
 1 Where a company operates more than one route, the passengers carried may be duplicated between routes.

Domestic Air Carrier Operation Statistics for the First Five Months of 1943 as Compared With the Same Period of 1942

Operator	Revenue Miles Flown		Revenue Passengers Carried		Revenue Passenger Miles Flown	
	January-May		January-May		January-May	
	1943	1942	1943	1942	1943	1942
All American Aviation, Inc.	409,013	330,762	0	0	0	0
American Airlines, Inc.	10,457,993	13,172,297	348,938	497,135	167,787,115	178,788,524
Braniff Airways, Inc.	1,539,268	2,337,544	63,182	71,528	23,753,213	22,716,303
Catalina Air Transport	0	36,704	0	7,724	0	231,720
Chicago & Southern Air Lines, Inc.	876,207	1,037,246	33,969	32,105	13,302,411	11,964,043
Continental Air Lines, Inc.	603,593	813,483	19,634	15,977	5,620,080	4,010,636
Delta Air Corporation	829,423	1,240,807	40,973	48,779	15,229,549	13,871,788
Eastern Air Lines, Inc.	5,367,044	8,739,776	160,193	267,593	85,263,099	110,378,544
Inland Air Lines, Inc.	333,336	585,513	4,365	5,972	1,485,155	1,481,298
Mid-Continent Airlines, Inc.	466,008	961,747	9,623	16,874	2,675,991	4,342,949
National Airlines, Inc.	689,210	679,504	27,082	21,825	8,254,380	5,856,323
Northeast Airlines, Inc.	232,472	402,502	9,683	13,549	2,385,553	2,418,434
Northwest Airlines, Inc.	1,519,877	2,408,889	36,804	55,900	18,290,403	23,401,902
Pennsylvania-Central Airlines Corporation	1,087,392	2,538,160	80,172	148,278	17,420,117	30,056,956
Transcontinental & Western Air, Inc.	6,270,581	7,833,604	156,046	178,623	85,588,625	81,279,692
United Air Lines Transport Corporation	8,396,621	10,304,643	200,331	231,041	126,997,459	114,002,732
Western Air Lines, Inc.	745,383	1,221,422	28,184	33,385	10,968,167	9,931,377
Total	39,822,991	54,644,603	1,219,179	1,645,888	585,021,317	614,733,221
Index (1942=100)	72.88	100.00	74.07	100.00	95.17	100.00

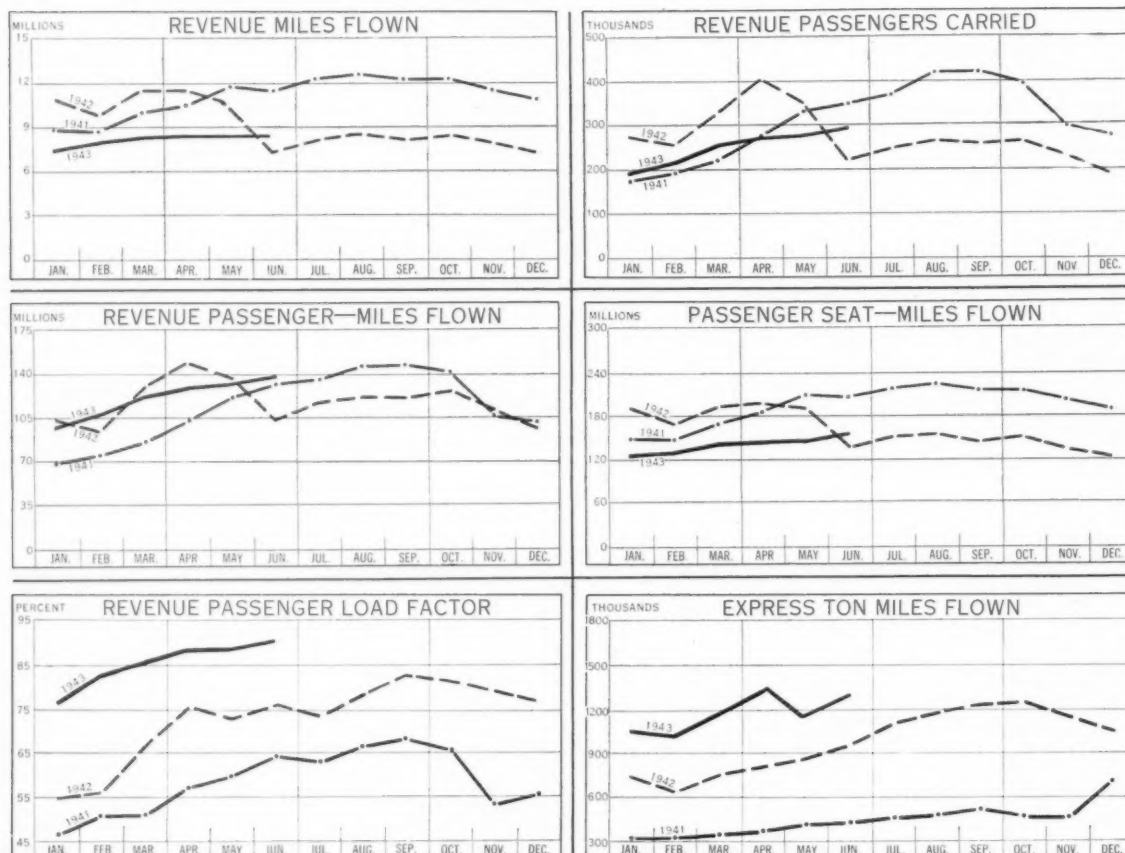
Operator	Express Carried (Pounds)		Express Pound-Miles Flown		Passenger Seat Miles Flown		Revenue Passenger Load Factor (Percent)	
	January-May		January-May		January-May		January-May	
	1943	1942	1943	1942	1943	1942	1943	1942
All American Aviation, Inc.	43,706	29,755	5,571,828	3,000,992	0	0	84.36	71.23
American Airlines, Inc.	7,491,356	3,619,515	3,631,407,749	1,815,041,915	198,894,308	251,000,663	89.56	58.95
Braniff Airways, Inc.	508,294	352,376	245,796,643	150,426,165	26,521,746	38,535,478	67.60	67.60
Catalina Air Transport	0	56,929	0	1,754,070	0	342,780	79.00	55.21
Chicago & Southern Air Lines, Inc.	311,465	183,337	138,709,907	72,884,514	16,837,961	21,668,893	83.36	48.31
Continental Air Lines, Inc.	43,481	25,048	13,829,257	7,198,060	6,741,991	8,302,658	87.43	66.03
Delta Air Corporation	229,007	108,559	87,051,837	39,200,380	17,418,970	21,009,289	85.14	65.04
Eastern Air Lines, Inc.	1,787,993	1,515,425	1,136,850,799	907,588,633	100,146,829	169,719,844	60.80	26.08
Inland Air Lines, Inc.	13,020	6,790	2,982,433	1,922,606	2,442,663	5,679,310	61.77	40.49
Mid-Continent Airlines, Inc.	47,023	38,368	10,931,737	8,877,530	4,332,212	10,726,126	85.92	65.46
National Airlines, Inc.	132,056	83,366	29,448,644	20,311,905	9,607,040	8,946,356	84.76	30.52
Northeast Airlines, Inc.	26,524	25,703	5,790,127	5,026,536	4,892,627	7,924,071	76.89	58.19
Northwest Airlines, Inc.	618,358	389,893	429,175,952	289,914,846	23,786,328	40,217,093	77.40	59.02
Pennsylvania-Central Airlines Corporation	1,441,821	920,510	268,574,902	190,026,914	22,506,204	50,928,079	85.50	60.69
Transcontinental & Western Air, Inc.	3,994,681	2,231,596	2,389,351,727	1,384,505,991	100,107,517	133,926,537	88.50	75.06
United Air Lines Transport Corporation	3,861,113	3,185,535	2,982,981,103	2,492,509,202	143,507,620	151,883,798	81.76	51.51
Western Air Lines, Inc.	404,998	448,131	172,598,685	199,761,823	13,414,962	19,279,761	84.64	65.39
Total	20,954,896	13,220,836	11,551,053,330	7,589,952,082	691,158,978	940,090,736	129.44	100.00
Index (1942=100)	158.50	100.00	152.19	100.00	73.52	100.00	129.44	100.00

	January	February	March	April	May	Total
Passengers carried (total revenue and nonrevenue)	208,380	233,049	265,175	280,914	282,103	1,269,621
Passenger miles flown (total revenue and nonrevenue)	101,410,602	110,982,551	124,256,467	132,984,531	133,266,615	602,900,766

Correction to February Report

Operator	Routes	Pounds Carried	Pound-Miles Flown	Operator	Routes	Pounds Carried	Pound-Miles Flown
National Airlines, Inc.	Jacksonville-New Orleans	37,403	4,311,192	Western Air Lines, Inc.	San Diego-Salt Lake City		31,782,792
					Salt Lake City-Great Falls		489,183
					Great Falls-Lethbridge		249,984
Total		44,500	5,842,988	Total			32,521,959
				Grand total (All domestic airlines)		3,647,269	2,039,554,970

Comparative charts of Domestic Operation for 1941, 1942, and 6 months of 1943



Opinion 49 Printed

Opinion 49, "Pan American-Grace Airways, Inc.—Mail Rates," Docket No. 716, is available in printed form as an advance sheet prior to its inclusion in Volume 3 of the Civil Aeronautics Board Reports. A copy of this opinion may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents. When ordering, be sure to include the opinion serial number and the docket number as well as the opinion title.

Second Largest Airport

During the last fiscal year, largely owing to its increased services for the war effort, the Washington National Airport became the second largest airport in the country from the point of volume of operations. The airport now provides facilities also for the operation of certain essential Army and Navy services, and it is expected that additional use will be made of the airport by the military services. La Guardia Field is first in size in operations handled.

Improved "Station Location" Marker Described in CAA Technical Report

In a report, recently printed, the CAA Technical Development Division describes the development of an improved "station location" or "Z" marker antenna system which has been designated as the SDA antenna system (spaced dipole array).

The development of the antenna design based on theoretical radiation properties of spaced dipoles is given, the equipment used is described, and the results obtained are analyzed.

The report concludes that the improved antenna system shows the following distinct advantages over that of the present Z marker:

(1) The marker will provide a more accurate position fix because the zone is considerably less at all altitudes.

(2) The marker zone can be extended to 20,000 feet altitude without modification of the present transmitter. Under these conditions the zone will be narrower than the present type of marker for all altitudes up to 5,700 feet and will be only 54.5 percent as wide at 1,000 feet.

(3) The broad marker zone normally obtained on flights off to one side of the antenna is appreciably reduced, resulting in a more accurate fix over the radio range station.

(4) Under flight conditions involving large crab angles, the marker zone is considerably smaller than with the present type of marker.

(5) The antenna system is easy to adjust and will provide a reliable and stable Z-marker zone under rain, snow, and sleet conditions.

(6) The radiating elements are simple in design, easy to adjust, and are adapted to quantity production. They may be assembled in the factory as prefabricated units ready for field installation.

Those interested may obtain a copy of the report "The Development of an Improved 'Station Location' or 'Z' Marker Antenna System," Technical Development Report No. 31, through the CAA Publications and Statistics Division, Washington, D. C.

OFFICIAL ACTIONS . . . Civil Aeronautics Board

ORDERS

ORDER No. 2334..... July 2, 1943

Denied application of Dominick J. Campanaro for modification of the Board's Order No. 609-639.

ORDER No. 2335..... July 2, 1943

Amended Order, Serial No. 2001, regarding transportation of mail by Colonial Airlines, Inc.

ORDER No. 2336..... July 1, 1943

Denied petition of National Airlines, Inc., for rehearing, reargument, and reconsideration of Order, Serial No. 2273.

ORDER No. 2337..... July 1, 1943

Denial motion of Mid-Continent Airlines, Inc., for reconsideration and reargument of Order, Serial No. 2273, and consolidation of Docket No. 651 with Docket Nos. 411, et al.

ORDER No. 2338..... July 7, 1943

Revoked student pilot certificate held by Ray O. Nyberg for certain violations of the Civil Air Regulations.

ORDER No. 2339..... July 7, 1943

Amended Order of the Board, No. 609-651, in the matter of John Morozowich.

ORDER No. 2340..... July 7, 1943

Temporarily suspended student pilot certificate held by Maurice Devoe for certain violations of the Civil Air Regulations.

ORDER No. 2341..... July 8, 1943

Authorized inauguration of service on route No. 15 by Braniff Airways, Inc. (Effective July 8, 1943.)

ORDER No. 2342..... July 8, 1943

Granted Aubrey Patterson, Jr., up to and including July 15, 1943, in which to file an answer to the complaint against him.

ORDER No. 2343..... July 8, 1943

Granted Horn's Flying School, Inc., up to and including July 15, 1943, in which to file an answer to the complaint against them.

ORDER No. 2344..... July 7, 1943

Dismissed proceeding against Northwest Airlines, Inc., in the matter of the rates, fares, and charges of certain airlines for the transportation of passengers.

ORDER No. 2345..... July 9, 1943

Revoked flight instructor rating held by Porter L. Alley for certain violations of the Civil Air Regulations.

ORDER No. 2346..... July 12, 1943

Assigned for oral argument proceeding re Roy W. Klotz, holder of aircraft dispatcher certificate.

ORDER No. 2347..... July 13, 1943

Authorized inauguration of service between San Antonio and Laredo, Tex., on route No. 50 by Braniff Airways, Inc. (Effective July 13, 1943.)

ORDER No. 2348..... July 13, 1943

Denied approval of interlocking relationship re applications of Lorenz Iversen, All American Aviation, Inc., and Penn-Central Airlines Corporation.

ORDER No. 2349..... July 13, 1943

Temporarily suspended student pilot certificate held by Fred C. Albers for violation of the Civil Air Regulations.

ORDER No. 2350..... July 13, 1943

Temporarily suspended student pilot certificate held by Jack M. Chadurgian for violation of the Civil Air Regulations.

ORDER No. 2351..... July 13, 1943

Temporarily suspended student pilot certificate held by Howard J. May for violation of the Civil Air Regulations.

ORDER No. 2352..... July 13, 1943

Temporarily suspended student pilot certificate held by Joseph D. O'Grady for violation of the Civil Air Regulations.

ORDER No. 2353..... July 13, 1943

Revoked student pilot certificate held by S. T. Blanton for certain violations of the Civil Air Regulations.

ORDER No. 2354..... July 13, 1943

Revoked student pilot certificate held by Darrel F. Elicke for certain violations of the Civil Air Regulations.

ORDER No. 2355..... July 13, 1943

Revoked private pilot certificate held by William C. Bryan for certain violations of the Civil Air Regulations; authorized him to apply for a pilot certificate after May 15, 1944.

ORDER No. 2356..... July 13, 1943

Further amended Order No. 2096, re application of Eastern Air Lines, Inc., for a temporary suspension of service at Baton Rouge, La.

ORDER No. 2357..... July 13, 1943

Withheld from publication certain testimony and exhibits re compensation for the transportation of mail by National Airlines, Inc., over routes Nos. 31 and 39; in the matter of the rates, fares, and charges of National Airlines, Inc., for the transportation of passengers.

ORDER No. 2358..... July 13, 1943

Temporarily exempted Pan American Airways, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act of 1938, insofar as said provisions would otherwise prevent them from providing air transportation to and from Sao Paulo, Brazil, on its route between the terminal points Miami, Fla., and Buenos Aires, Argentina.

ORDER No. 2359..... July 16, 1943

Revoked student pilot certificate held by Raymond W. Flickinger for certain violations of the Civil Air Regulations.

ORDER No. 2360..... July 16, 1943

Revoked private pilot certificate held by Bertram A. Tripp for certain violations of the Civil Air Regulations.

ORDER No. 2361..... July 17, 1943

Withheld from public disclosure certain exhibits in the proceeding re compensation for the transportation of mail by Delta Air Corporation over routes Nos. 24 and 54; regarding rates, fares and charges of American Airlines, Inc., et al. for the transportation of passengers.

ORDER No. 2362..... July 17, 1943

Consolidated into one proceeding certification of the Postmaster General that the needs of the Postal Service require the inclusion of Ripley, W. Va., as an intermediate point on route No. 49, Docket No. 907, and the application of All American Aviation, Inc., Docket No. 931, requesting the inclusion of Ripley, W. Va., as an intermediate point on route No. 49; assigned proceeding for public hearing.

ORDER No. 2363..... July 19, 1943

Assigned for oral argument proceeding in the matter of Roy W. Klotz, holder of aircraft dispatcher certificate.

ORDER No. 2364..... July 19, 1943

Granted permission to certain airlines to appear as amici curiae re compensation for the transportation of mail by Chicago and Southern Air Lines, Inc., over routes Nos. 8 and 53.

ORDER No. 2365..... July 19, 1943

Partially revoked Order No. 1778, insofar as it authorized suspension of service by Mid-Continent Airlines, Inc., to and from St. Joseph, Mo. (Effective 90 days from date of this order.)

ORDER No. 2366..... July 19, 1943

Temporarily exempted American Airlines, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act of 1938, insofar as said provisions would otherwise prevent them from engaging in air transportation with respect to persons and property only, to and from Palm Springs, Calif., subject to certain conditions.

ORDER No. 2367..... July 7, 1943

Limited airman certificate and revoked flight instructor rating held by Francis C. Bethell for certain violations of the Civil Air Regulations.

ORDER No. 2368..... July 20, 1943

Permitted immediate inauguration of nonstop service by Northwest Airlines, Inc., between Great Falls and Missoula, Mont., on route No. 3.

ORDER No. 2369..... July 22, 1943

Assigned for oral argument proceeding re petition of Ellis C. MacDonald for reconsideration of the refusal of the Administrator of Civil Aeronautics to issue a student pilot certificate.

ORDER No. 2370..... July 23, 1943

Revoked flight instructor rating held by Keith Ditto for certain violations of the Civil Air Regulations.

ORDER No. 2371..... July 28, 1943

Amended effective date of Order, Serial Nos. 2205 and 2250 re application of Mid-Continent Airlines, Inc., for suspension of service at certain points.

ORDER No. 2372----- July 28, 1943
Approved interlocking relationships re application of Carleton Putnam and Chicago and Southern Air Lines, Inc.

ORDER No. 2373----- July 28, 1943
Revoked commercial pilot certificate held by James H. Porter for violation of the Civil Air Regulations.

ORDER No. 2374----- July 28, 1943
Temporarily suspended flight instructor rating held by Fritz F. Anderson for certain violations of the Civil Air Regulations.

ORDER No. 2375----- July 28, 1943
Amended Order No. 1971 re revocation of student pilot certificate held by Raymond N. Austin.

ORDER No. 2376----- July 28, 1943
Revoked student pilot certificate held by Charles F. Ham for certain violations of the Civil Air Regulations. Respondent may, however, apply for any pilot certificate for which he may be eligible after June 11, 1944.

ORDER No. 2377----- July 28, 1943
Suspended for 6 months private pilot certificate held by Leonidas W. Hood for certain violations of the Civil Air Regulations.

ORDER No. 2378----- July 29, 1943
Granted Braniff Airways, Inc., permission for expeditious use of Denver Municipal Airport, Peterson Field, and the Pueblo Municipal Airport, so as to serve Denver, Colorado Springs, and Pueblo, Colo.

ORDER No. 2379----- July 31, 1943
Withheld from publication, until further order of the Board, certain exhibits in the proceeding re compensation for the transportation of mail by Western Air Lines, Inc., over routes Nos. 13, 19, and 52.

REGULATIONS

REGULATION No. 279----- July 21, 1943
Effective July 21, 1943:

Military aircraft being flown on special missions approved by competent authority and requiring noncompliance with section 60.61 of the Civil Air Regulations shall not be required to show position lights: *Provided*, That when any portions of such flights are made within airway traffic control areas, the appropriate airway traffic control center of the Administrator shall be notified as to the areas within which the flights are to be conducted, flight altitudes to be used, estimated time of the flights, and other pertinent and unclassified information necessary to safeguard operation of other aircraft. Such notification shall be made prior to departure of the flights or immediately thereafter, depending upon the military urgency existent. This regulation shall terminate at the end of the war.

REGULATION No. 280----- July 29, 1943
Effective September 1, 1943:

SECTION 292.4 OF THE ECONOMIC REGULATIONS—APPLICATIONS FOR EXEMPTIONS

(a) *Notice of application.*—Prior to or coincident with the filing of any application for exemption from the requirements of title IV of the Civil Aeronautics Act of 1938, as amended, or any provision thereof, or any rule, regulation, term, condition, or limitation prescribed thereunder, the applicant, unless otherwise authorized by the Board, shall cause a notice of such filing to be served by

personal service or registered mail upon all persons who may have an interest in the subject matter of the application. In case of any application which proposes the furnishing or discontinuance of air transportation to or from any point, the following persons shall be presumed to have an interest in the subject matter of the application:

(1) Any scheduled air carrier which regularly renders service to any point involved in the application;

(2) Any person whose application for a certificate of public convenience and necessity authorizing regular service to or from any such point has been filed with, and has not finally been disposed of, by the Board;

(3) The chief executive of any State, Territory, or possession of the United States in which any such point is located; and

(4) The chief executive of the city, town, or other unit of local government at any such point located in the United States or any Territory or possession thereof.

Such notice shall indicate the date upon which the application will be or is being filed and, unless accompanied by a copy of the application, shall contain a brief statement of the relief requested.

(b) *Form and contents of application.*—The application shall be entitled "Application for Exemption Order" and in addition to the specific relief requested, shall contain a list of the persons upon whom notice of the filing thereof was or is being served, and facts relied upon to establish that the enforcement of the matter from which exemption is sought is or would be an undue burden upon the applicant by reason of the limited extent of, or unusual circumstances affecting, the operations of such applicant and is not in the public interest. An executed original and nine copies of such application with a copy of the notice attached to each shall be filed with the Board.

(c) *Additional service of notice.*—Action on the application may be withheld by the Board, in its discretion, pending proof of such additional service of notice by the applicant as the Board may direct.

(d) *Emergency application.*—In the event of an emergency requiring immediate action, an application may be filed by telegraph if it substantially conforms to the requirements hereof as to contents and notice (which notice in such case may be served by telegraph) and states the reasons deemed to necessitate immediate action.

AMENDMENT 25-1----- July 21, 1943
Effective July 21, 1943:

Effective July 21, 1943, Part 25 of the Civil Air Regulations is amended as follows:

1. By striking the following phrase from sections 25.700 and 25.80 (c): "6 months after the effective date of this part" and inserting in each section in lieu thereof: "12 months after January 21, 1943."

2. By striking the words "two pounds" from section 25.86 and inserting in lieu thereof: "six pounds."

AMENDMENT 60-1----- July 12, 1943
Effective July 12, 1943:

Effective July 12, 1943, section 60.60 of the Civil Air Regulations, is amended to read as follows:

60.60. *Aircraft on the ground.*—Between sunset and sunrise all aircraft parked or moved within, or in dangerous proximity to, the usable portion of all landing areas used for, or available to night flight operations shall be clearly illuminated or lighted, or the area marked with obstruction lights.

AMENDMENT 61-10----- June 30, 1943
Effective July 1, 1943:

Effective July 1, 1943, section 61.341 of the Civil Air Regulations is amended by striking the word "July" from said regulation and inserting in lieu thereof the word "November."

AMENDMENT 61-11----- July 23, 1943
Effective July 23, 1943:

1. Amend § 61.7302 to read as follows: 61.7302 (Unassigned).—The subject matter heretofore contained in this section will be found in § 61.752.

2. Add a new § 61.752 to read as follows: 61.752 *Approach limitations.*—No pilot shall, at any airport, let down below his last approved cruising altitude or continue descent when he has received United States Weather Bureau information that the measured ceiling¹ is below or the visibility is less than the authorized minimums prescribed in the air carrier operating certificate for landing at that airport.

¹The definition of measured ceiling as revised on June 1, 1943, will be found on page 28-2R, paragraph 2-131 of Circular N of the United States Weather Bureau.

New Type Approvals

(Approval numbers and dates of assignment in parentheses)

Aircraft

Sikorsky, VS-44-A, 39 place closed flying boat monoplane. Engines, 4 Pratt & Whitney Twin Wasps SIC3G (type certificate No. 752, July 14, 1943).

Propellers

G. B. Lewis Co., L23, wood, 90-inch diameter, 58- to 48-inch pitch, 90-horsepower, 2,375 revolutions per minute (type certificate No. 796, July 14, 1943).

New Models Added to Old Type Approvals

(Approval numbers and dates of approval of new models in parentheses)

Propellers

G. B. Lewis Co., L16B, L16B-1, and L16B-2; wood; 70-, 69-, and 68-inch diameter, respectively; 53- to 43-inch pitch; 55-horsepower, 2,300 revolutions per minute (type certificate No. 788, July 10, 1943).

Appliances

Russell, safety belt, model AE-306. Approved for one or two persons (type certificate No. 90, July 14, 1943).

Switlik, parachutes, models CC4-24S-C20 and CC4-26S-C20; back pack; conical canopy type; 24- and 26-foot diameter, respectively; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models DB-26S-C20 and DB-24S-C20; back pack; conical canopy type; 26- and 24-foot diameter, respectively; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models DC-24S-C20 and DC-26S-C20; chest pack; conical canopy type; 24- and 26-foot diameter, respectively; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models DS-24S-C20 and DS-26S-C20; seat pack; conical canopy type; 24- and 26-foot diameter, respectively; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models 100-C20 and 200-C20; seat and back pack, respectively; conical canopy type; 24-foot diameter; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models 300-C20 and 400-C20; seat and back pack, respectively; conical canopy type; 26-foot diameter; silk or nylon material (type certificate No. 151, July 15, 1943).

Switlik, parachutes, models AN-S1-C20 and AN-S2-C20; seat pack; conical canopy type; 24- and 28-foot diameter, respectively; silk or nylon material (type certificate No. 151, July 15, 1943).

Goodyear, low-pressure wheels, model L6101EM, 6.50-10. Approved static load per wheel, 2,100 pounds (type certificate No. 37, July 20, 1943).

NACA Annual Report

The Twenty-eighth Annual Report of the National Advisory Committee for Aeronautics (1942) is on sale for 10 cents at the Government Printing Office, Superintendent of Documents, Washington, D. C.

STATUS OF AIR REGULATIONS

Regulations as of August 1, 1943

HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

THOSE PARTS AND MANUALS ON WHICH A PRICE IS LISTED IN THE TABULATION WHICH FOLLOWS ARE ON SALE AT THE GOVERNMENT PRINTING OFFICE (SHOWN AS GPO IN TABLE), AND ARE NOT AVAILABLE FOR FREE DISTRIBUTION FROM THE CAA.

The Government Printing Office is the official sales agency for all government publications and is separate and distinct from the CAA and the Department of Commerce. The rules of the Superintendent of Documents require that remittances be made in advance of shipment of publications, either by coupons, sold in sets of 20 for \$1 and good until used, or by check or money order payable to the Superintendent of Documents, Government Printing Office. Currency is sent at sender's risk. Postage stamps, foreign money, and smooth coins are not acceptable. A discount of 25 percent is allowable to book dealers and quantity purchasers of 100 or more publications, on condition that the purchasers will adhere to the public sales price set by the Superintendent of Documents and that publi-

cations shall not be overprinted with any advertising matter.

Eventually, all Parts and Manuals will be placed on sale; meanwhile, those not yet on sale (carrying remark, "Order from CAA only") may be obtained without charge from the CAA upon demonstration of valid interest on the applicant's part.

The following tabulation carries in the right-hand column the numbers of all effective amendments to each Part and Manual issued subsequent to its publication. Parts and Manuals obtained from the CAA will include all effective amendments, but amendments for Parts and Manuals purchased from GPO must be requested separately from the CAA. When requesting amendments from the CAA, please be sure to state Part numbers for which they are desired.

ALL AMENDMENTS TO THE REGULATIONS, AND NOTICE OF NEW PARTS AND MANUALS ARE PRINTED IN THE CIVIL AERONAUTICS JOURNAL, AS RELEASED.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in standard three-ring binders.

For your guidance we have listed the Parts and Manuals applicable to the various airmen certificates issued.

Pilots:

Parts 01, 20, 60, 501, 503, and Manual 60.

Airline Transport Pilots: Parts 01, 04, 21, 27, 40, 60, 61, 98, 501, 503, and Manuals 04 and 60.

Lighter-Than-Air Pilots: Parts 01, 22, 60, 501, 503, and Manual 60.

Aircraft Mechanics: Parts 01, 04, 15, 18, 24, 501, 503, section 60.32, and Manuals 04, 15, and 18.

Aircraft Engine Mechanics: Parts 01, 04, 13, 14, 18, 24, 501, 503, and Manuals 04, 14, and 18.

Parachute Technicians: Parts 15, 25, 54, 60, and Release 144.

Air-Traffic Control-Tower Operators: Parts 26, 60, and Manual 60.

Aircraft Dispatchers: Parts 27, 40, 60, 61, and Manual 60.

Ground Instructors (rating in Civil Air Regulations): Parts 01, 20, 51, 60, 501, 503, and Manual 60.

PARTS CANCELED AND UNASSIGNED

Canceled Parts 00 and 03 now incorporated in Part 501; canceled Part 23 now incorporated in Part 51. Parts 90-96, inclusive, canceled. All other Part numbers not shown are unassigned.

Civil Air Regulations

Aircraft

PART NO.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
01	AIRWORTHINESS CERTIFICATES.....	10-15-42	On sale at GPO.....	\$0.05	
02	TYPE AND PRODUCTION CERTIFICATES.....	3-1-41	On sale at GPO.....	.05	
04	AIRPLANE AIRWORTHINESS.....	8-15-42	On sale at GPO.....	.15	04-1, Reg. Ser. 228.
13	AIRCRAFT ENGINE AIRWORTHINESS.....	8-1-41	On sale at GPO.....	.05	
14	AIRCRAFT PROPELLER AIRWORTHINESS.....	7-15-42	On sale at GPO.....	.05	
15	AIRCRAFT EQUIPMENT AIRWORTHINESS.....	11-15-40	In stock; order from CAA only.....	.05	15-1, 15-2, Order 2092.
16	AIRCRAFT RADIO EQUIPMENT AIRWORTHINESS.....	2-13-41	On sale at GPO.....	.05	
18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS.....	9-1-42	On sale at GPO.....	.05	

Airmen

20	PILOT CERTIFICATES.....	9-1-42	On sale at GPO.....	\$0.10	20-1, thru 20-5, Reg. Ser. 242, 247.
21	AIRLINE TRANSPORT PILOT RATING.....	10-1-42	On sale at GPO.....	.05	21-1, 21-2, Reg. Ser. 278.
22	LIGHTER-THAN-AIR PILOT CERTIFICATES.....	10-15-42	On sale at GPO.....	.05	Reg. Ser. 247.
24	MECHANIC CERTIFICATES.....	10-1-42	On sale at GPO.....	.05	24-1, 24-2.
25	PARACHUTE TECHNICIAN CERTIFICATES.....	1-21-43	In stock; order from CAA only.....	.05	25-1.
26	AIR-TRAFFIC CONTROL-TOWER OPERATOR CERTIFICATES.....	7-1-42	On sale at GPO.....	.05	26-1, 26-2.
27	AIRCRAFT DISPATCHER CERTIFICATES.....	9-1-42	On sale at GPO.....	.05	27-1.
29	PHYSICAL STANDARDS FOR AIRMEN.....	6-1-42	On sale at GPO.....	.05	

Air Carriers

40	AIR CARRIER OPERATING CERTIFICATION.....	11-1-42	On sale at GPO.....	\$0.10	40-1, 40-2.
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Air Agencies

50	FLYING SCHOOL RATING.....	11-1-40	On sale at GPO.....	\$0.05	87, 113, 50-3, Reg. No. 216. ¹
51	GROUND INSTRUCTOR RATING.....	7-1-42	On sale at GPO.....	.05	
52	REPAIR STATION RATING.....	10-1-42	On sale at GPO.....	.05	
53	MECHANIC SCHOOL RATING.....	8-1-42	On sale at GPO.....	.05	
54	PARACHUTE LOFT CERTIFICATES AND RATINGS.....	1-21-43	In stock; order from CAA only.....	.05	

Air Navigation

60	AIR-TRAFFIC RULES.....	7-1-43	On sale at GPO.....	\$0.10	60-1.
61	SCHEDULED AIR-CARRIER RULES.....	10-15-42	On sale at GPO.....	.10	61-1 thru 61-11.
66	FOREIGN AIR-CARRIER REGULATIONS.....	1-15-42	On sale at GPO.....	.05	

Miscellaneous

97	RULES OF PRACTICE GOVERNING SUSPENSION AND REVOCATION PROCEEDINGS.....	10-1-42	In stock; order from CAA only.....		
98	DEFINITIONS.....	10-15-42	On sale at GPO.....	\$0.05	
99	MODE OF CITATION OF REGULATIONS.....	11-15-40	In stock; order from CAA only.....		

¹ No copies available. (Waiver of requirements.) Consult CAA inspector for specific provisions of this amendment.

Regulations of the Administrator

PART NO.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
501	AIRCRAFT REGISTRATION CERTIFICATES.....	3-31-43	In stock; order from CAA only.....	.....
503	RECORDATION OF AIRCRAFT OWNERSHIP.....	3-31-43	In stock; order from CAA only.....	.....
510	GENERAL REGULATIONS, WASHINGTON NATIONAL AIRPORT.	9-26-41	In stock; order from CAA only.....	.....
511	GENERAL AERONAUTICAL RULES FOR THE WASHINGTON NATIONAL AIRPORT.	9-26-41	In stock; order from CAA only.....	.....
325	NOTICE OF CONSTRUCTION OR ALTERATION OF STRUCTURES ON OR NEAR CIVIL AIRWAYS.	11-1-41	In stock; order from CAA only.....	.....	1.
531	SEIZURE OF AIRCRAFT.....	12-8-41	In stock; order from CAA only.....	.....
532	REPRODUCTION AND DISSEMINATION OF CURRENT EXAMINATION MATERIALS.	1-15-43	In stock; order from CAA only.....	.....
600	DESIGNATION OF CIVIL AIRWAYS.....	3-1-42	Not published !.....	.....	1 through 27. ¹
601	DESIGNATION OF AIRWAY TRAFFIC CONTROL AREAS, ETC.	1-15-42	Not published !.....	.....	1 through 42. ¹

Civil Aeronautics Manuals

04	AIRPLANE AIRWORTHINESS.....	2-1-41	On sale at GPO.....	\$0.50	Release 50, 97, ² 105, ² 117, ² 140. ²
14	AIRCRAFT PROPELLER AIRWORTHINESS.....	12-1-38	In stock; order from CAA only.....	.....
15	AIRCRAFT EQUIPMENT AIRWORTHINESS.....	7-1-38	On sale at GPO.....	.10	
16	AIRCRAFT RADIO EQUIPMENT AIRWORTHINESS.....	2-13-41	In stock; order from CAA only.....	.....	Release 62.
18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS.	6-1-41	On sale at GPO.....	.50	
50	FLYING SCHOOL RATING.....	12-40	In stock; order from CAA only.....	.....	Release 77, 111.
52	REPAIR STATION RATING.....	2-41	In stock; order from CAA only.....	.....
53	MECHANIC SCHOOL RATING.....	5-40	In stock; order from CAA only.....	.....
60	AIR TRAFFIC RULES.....	11-15-42	On sale at GPO.....	.20	

¹ See Air Navigation Radio Aids.
² Only pertinent pages furnished.

American Asks Consolidation Of Air Routes

American Airlines has applied to the Civil Aeronautics Board for permission to consolidate, amend, and extend its existing routes on the basis that consolidation will make possible more efficient and economical operation.

In post-war anticipation of securing planes which will be equal to transcontinental non-stop flights and a greater demand for through passage, American proposes consolidation into a single route of Routes 18, 23, and 4 to make possible non-stop flights from Boston to Los Angeles. Under the present set-up, stops must be made at various route junction points across country. Consolidation of Routes 7 and 21, extending from New York to Chicago, is proposed for the same reason—to eliminate stops except where traffic justifies.

Authorization is asked to extend the Cleveland-Nashville Route 22 to Detroit on one end and to New Orleans on the other. Route 25 would be extended from Chicago to Minneapolis-St. Paul and from Washington to New York. The Chicago-Fort Worth Route 30 would be extended to Milwaukee.

American has also applied for three new routes: One between St. Louis and Cleveland by way of Springfield, Ill., Indianapolis, Anderson, Muncie, and Fort Wayne, Ind., Toledo, Ohio, and beyond to the terminals of Detroit and Cleveland; the second between Detroit and Miami; and the third from Syracuse to Ottawa and Syracuse to Montreal, which would permit through service from Washington, D. C., to Ottawa, the Capital City of Canada.

Set Date for Feeder, Local, Pick-up Hearings

The Board has set September 28 as the tentative date for the initial hearings on local, feeder, and pick-up air services. The hearings will be held in Washington, D. C.

Around 42 operating air carriers, applicants, manufacturers, Federal and State agencies and interested persons have indicated that they will present material at the hearings.

While the order of presentation has not yet been decided upon, the groupings probably will be as follows:

Presently operating air carriers. Applicants and prospective applicants. (This group will include charter and fixed-base operators, training schools, and other aircraft operators, and trade associations of such persons.) Manufacturers. (This group will include the Aeronautical Chamber of Commerce of America.) Federal and State Governmental agencies and aeronautical boards and commissions. Other interested persons.

Air Almanac

The American Air Almanac, May-August 1943 of the Nautical Almanac Office, is available for \$1 at the Government Printing Office, Superintendent of Documents, Washington, D. C. The almanac contains 245 pages.



Visual Defect Subject of CAA Research

Aniseikonia, a visual defect which makes an object appear to be a different size or shape to either eye, is the subject of a recently issued report by the CAA Technical Development Division.

When one eye pictures an object one way and the other gives a different version, confusion results. The aniseikonia victim cannot judge distance accurately; objects appear larger or smaller than they are, and forms of extended figures are distorted. The pilot, for instance, who consistently misjudges the height of a plane from the ground, and has a tendency to level off too high or too low, or land with one wing low, may find aniseikonia the source of his difficulty.

Believing that this visual defect might give a pilot trouble in landing or taking off, in avoiding obstacles, and in flying in formation, or in acrobatics, the CAA has interested itself in research to find the extent to which aniseikonia exists among pilots and student pilots, and to determine whether it is responsible for poor flying technique.

Arrangements were made with the Dartmouth Eye Institute to conduct an experiment upon a selected group of Pensacola cadets and a group of first-line commercial pilots at Kansas City. This report contains the results of the experiment and a description of the tests conducted. Copies of the report, "Incidence and Effect of Aniseikonia on Aircraft Pilotage," are available upon request to the CAA Publications and Statistics Division by those with a bona fide interest in the subject matter.

CIVIL AERONAUTICS JOURNAL

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